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# Fossil plants from Florissant, Colorado

THEODORE DRU ALISON COCKERELL

### **Typha Lesquereuxi** nom. nov.

*Typha latissima* "Al. Br." Lesq. Cret. and Tert. Fl. 141. *pl. 23. f. 4, 4a.* 1883. Not *T. latissima* Al. Br.

### **Populus Scudderi** sp. nov.

*Populus balsamoides* (?) var. *latifolia* Lesq. Cret. and Tert. Fl. 158. *pl. 31. f. 4.* 1883.

### **Populus Lesquereuxi** nom. nov.

*Populus Heerii* Lesquereux, Cret. and Tert. Fl. 157. *pl. 30.* 1883. Not *P. Heerii* Saporta.

Also collected by Henderson & Ramaley, 1905. Dr. M. A. Howe has very kindly sent me a tracing of Saporta's figures of *P. Heerii* of Europe. The one well-formed leaf he shows is broader, and with a more tapering base than in our plant, and does not impress one as being identical. The probability of identity being on general grounds so slight, I think it is best to consider the Florissant plant distinct.

### **Salix Ramaleyi** sp. nov.

Leaf about 11 cm. long, 23 mm. broad in middle; base cuneate, with an angle of about 70°, but tapering gradually to the petiole (not terminating abruptly as in *S. amygdalaefolia* Lesq.); leaf apparently thin and glabrous, the midrib strong for the basal 3 cm., beyond that weak; secondary nerves, at middle of leaf, diverging at an angle of about 45°, and about 8 mm. apart, not joining on lateral margins; reticulations fairly distinct, not especially fine; apex tapering (the extreme apex lost); marginal serrations numerous (4 to 7 in 10 mm., usually about 6), very sharp, about 1.3 mm. long on inner, and 2.3 mm. on outer edge.

By the venation, and the shape of the base, as well as the larger size, this cannot be *S. amygdalaefolia*, nor can I identify it with any other species. At first sight, it struck me as resembling the terminal leaflet of a species of *Sambucus*, but careful comparisons showed that the venation and shape of base were rather those of *Salix* than *Sambucus*. From *Amygdalus gracilis* Lesq. the leaf is known, not only by the venation, but also by the comparatively parallel sides; thus the width in the middle being 23 mm., the widths at intervals of 10 mm. toward the apex are 23 mm., 21 mm., 17 mm., 14 mm., 9 mm.

Florissant; railroad cut east of Florissant station (*Henderson & Ramaley*).

### **Myrica Hendersoni** sp. nov.

Represented by a twig bearing six leaves, which as preserved are light red, the twig being darker red. There is no resemblance to the numerous species of *Myrica* described from Florissant, but, on the contrary, a close resemblance to the living *M. cerifera* and *M. Gale*. At first sight, the leaves seem to be entire, and the plant looks like a *Salix* closely allied to *S. myrtilloides*; on close inspection, however, the apical halves of the larger leaves are seen to be sparingly dentate, irregularly and sharply, not at all in the manner of a *Salix*, but entirely as in *Myrica cerifera*. As compared with *M. cerifera*, the petioles are much shorter (not much

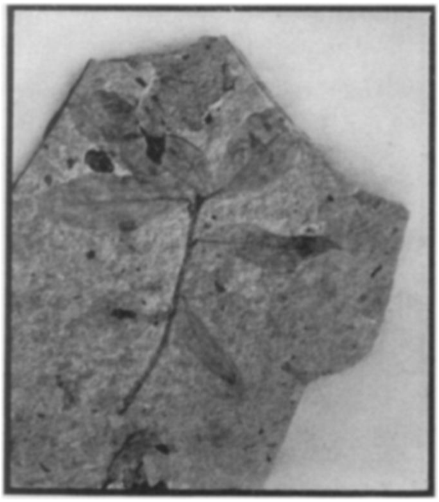

FIG. 1. *Myrica Hendersoni* Cockerell.

over 3 mm.), and the leaves are broader for their length, much less tapering at base. Leaves about 31 mm. long are about 10 mm. wide. The venation appears to be normal; the lateral veins leave the midrib at an angle of perhaps 55°. (FIGURE 1.)

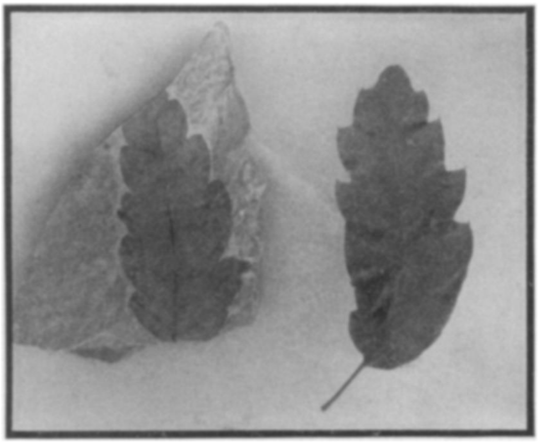

FIG. 2. *Quercus Ramaleyi* Cockerell. FIG. 3. *Quercus Fendleri.*

Southwest of Florissant, 1905 (*Henderson & Ramaley*). There is a singular resemblance to the leaf which Lesquereux calls *Santalum americanum*, but this latter is quite entire, and shows no venation except the midrib.

### **Quercus Ramaleyi** sp. nov.

Leaf about 42 mm. long and 17 mm. wide, apparently firm, with prominent venation; margins divided into low broad lobes, their points directed apicad, and rather blunt, not mucronate, their long outer margins convex. Similar to *Q. Fendleri*, but the lobes somewhat less divergent and not sharp-pointed. In many respects, the leaf recalls that of *Myrica alkalina* Lesq., but it is different in detail, and the venation is that of *Quercus*. (FIGURE 2.)

Florissant, Colorado, at station 3, in railroad cut east of Florissant railway station, 1905 (*Henderson & Ramaley*). With *Ilex*, etc.

Figure 2 shows the fossil species, with a leaf of *Q. Fendleri* (from Las Vegas Hot Springs, N. M.; figure 3) for comparison.

**Amelanchier Scudderi** sp. nov.

Represented by a leaf, which as preserved is very pale reddish, and is perfect except for the lack of the left apical part, due to the loss of part of the slab. Length about 45 mm., breadth about 38 mm., the apex broadly rounded, and the base very broadly cuneate (forming a very obtuse angle), the shape being much as in the living *A. alnifolia* Nutt. The serrations begin about 27 mm. from the bases measuring along the margin, and are large and entire, shaped as in *A. rotundifolia*, 8 or 9 in number on each side. The lateral nervures are from 6 to 8 mm. apart, mostly simple, but one branches 5.5 mm. from base. (FIGURE 4.)

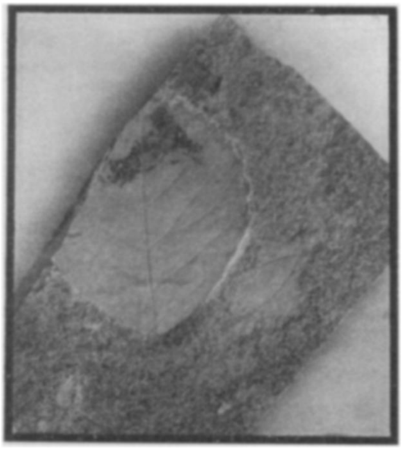

FIG. 4. *Amelanchier Scudderi* Cockerell.

Florissant, station 3, 1905 (*Henderson & Ramaley*). Named after Mr. S. H. Scudder, who has described the insects of the same beds. It is perhaps as much like a *Malus* as an *Amelanchier*, but from its close resemblance to *A. alnifolia* I refer it to the latter genus. It is quite distinct from *A. typica* Lesq., described from Florissant; there is, however, a good deal of resemblance to the leaf figured by Lesquereux as *Planera Ungeri*, the difference being in the partial branching of the lateral veins, the broader form, more obtuse apex and base, and wider angle of departure of the lateral veins.

### **Rhamnus Kirchneri** nom. nov.

*Rhamnus ellipticus* Kirch. Trans. Acad. St. Louis **8**: 183. *pl. 15. f. 3.* Not *R. ellipticus* Swartz, 1788.

### **Ilex Leonis** nom. nov.

*Ilex quercifolia* Lesq. Cret. and Tert. Fl. 186. *pl. 38. f. 2–5.* Not *I. quercifolia* Murb. 1798.

### **Crataegus Lesquereuxi** nom. nov.

*Crataegus acerifolia* Lesq. Cret. and Tert. Fl. 198. *pl. 36. f. 10.* Not *C. acerifolia* Moench, 1785.

### **Malvastrum (?) exhumatum** sp. nov.

Represented by a leaf, which as preserved is dark reddish, and is perfect except for the loss of nearly all of one of the lateral lobes. Leaf 28 mm. long, trilobed, with the form of the leaf of *M. elatum* (E. G. Baker) A. Nelson, a species not rare in New Mexico. The lobes are cut in the usual irregular manner, and the lobules have the characteristic convex sides and rather blunt points. The large median lobe is about 21 mm. long and 11 mm. broad, with a deep incision nearly 5 mm. long on the left side, and two smaller ones on the right; the left lateral lobe is about 12 mm. long and 5 mm. broad, with a single incision. (FIGURE 5.)

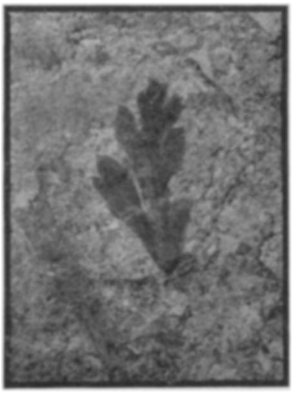

FIG. 5. *Malvastrum (?) exhumatum* Cockerell.

Southwest of Florissant, 1905 (*Henderson & Ramaley.*)

### **Carduus florissantensis** sp. nov.

Represented by the apical portion of a leaf, the fragment about 4.5 cm. long, looking exactly like a leaf of *Quercus coccinea*, but having the margin thickened, and the venation like that of *Carduus*, the lateral veins connected by arched veins running parallel (except for the arching) with the midrib. The leaf is pinnatifid into few entire segments, as in the *Quercus* cited, these being sharply pointed; one of them is about 15 mm. long, and

10 mm. broad at base; the least diameter of the leaf, at a distance of some 35 mm. from the apex, is 13 mm.; the lateral veins leave the midrib at an angle perhaps a little less than 45°. The specimen, as preserved, is light reddish. (FIGURE 6.)

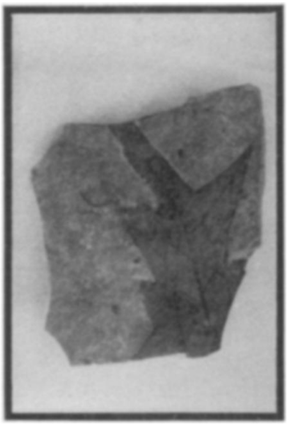

FIG. 6. *Carduus florissantensis* Cockerell.

Southwest of Florissant, 1905 (*Henderson & Ramaley*).

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I take this opportunity to correct the current name of a Wyoming fossil:

POPULUS AEQUALIS Schimp. Pal. Vég. **2**: 693.

*Populus laevigata* Lesq. Am. Jour. Sci. II. **45**: 205. Not *P. laevigata* Ait. 1789.

Also of a species of the Dakota group:

**Populus dakotana** nom. nov.

*Populus cordifolia* Newb. Later Extinct Floras 18. 1868. Not *P. cordifolia* Burgsdorf, 1787.

Also of a Fort Union species:

**Populus Newberryi** nom. nov.

*Populus acerifolia* Newb. Later Extinct Floras 65. 1868. Not *P. acerifolia* Lodd. 1838.

BOULDER, COLORADO.